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SNOW SURVEY

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Reserve
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Ida-35071

Water for most the Western States comes from the snow that blankets the mountains during the winter months. In the spring, as the snow melts, the water rushes down the brooks and streams, replenishing rivers, reservoirs, and ponds. How much water will be available for agricultural, industrial, municipal and domestic uses and hydroelectric power, depends on the snow that fell the preceding winter.

For more than a quarter century, the Department of Agriculture's Soil Conservation Service in cooperation with many Federal, State, and local agencies, irrigation and power companies, and British Columbia has been forecasting the spring and summer water supply through its snow survey operation.

During the winter snow surveyors travel some 71,000 miles over rugged mountain terrain on skis, snowshoes and special oversnow machines to measure the snow-pack at 1,400 permanent locations in 11 Western States.

At each stop the snow depth is measured and its

weight recorded. With this related data, accurate forecasts can be made as to the amount of water available for use the coming year. Water supply forecasts reports are released throughout the winter and early spring to the news media, State and municipal governments, private industries, farmers, and other water users.

If the streamflow forecast is high, reservoirs may be lowered well in advance of the snowmelt to provide adequate flood control space.

If the forecast is low, farmers can adjust crop acreages, existing reservoirs may be kept at a high level since flooding will not be a problem, and municipalities may initiate measures to conserve what water will be available.

The Soil Conservation Service's snow survey information is being used more intensively each year as demands on Western water resources increase, making the operation more important in the Department's Rural Areas Development program.



The snow surveyor in the cover photo prepares to thrust aluminum sampling tube into snow to get measurement of snow's depth and weight. When snow is heavy a driving wrench is attached to tube to aid in forcing it into the snow as pictured in the photo above. Tube is calibrated in inches and slotted so that snow depth can be easily read and recorded.

Ore-40199



Tube is removed with snow core and w determine the water content of the sn is weighed empty prior to taking the sno
Ore-40122



Special over snow vehicles are used whenever possible in traveling snow course. These four wheel drive machines travel at 4 to 10 miles per hour depending on snow conditions and terrain.

Utah-1306



Shelter cabins with emergency supplies are strategically located along the snow course route. Here a surveyor enters through the "Santa Claus" chimney since actual cabin is buried beneath snow drift.

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Tube is removed with snow core and weighed to determine the water content of the snow. Tube is weighed empty prior to taking the snow sample. Ore-40122

Soil moisture, determined electronically, helps surveyor forecast more accurately the water runoff at time of snowmelt. Colo-11167



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When the going gets too rough for snow vehicles, snow surveyors take to skis and snow shoes. Surveyors annually travel 71,000 miles on foot and in special over snow machines. Colo-11214



When spring arrives, snow in the high mountains melts once again filling streams and brooks with rushing water. Through the Soil Conservation Service's snow survey, the people down below have known months in advance how much water will be available for the coming growing season.

Ido-25151



Water from the snowmelt replenishes storage reservoirs from which water is drawn for irrigation, industrial and domestic uses. It also fills the larger reservoirs and is used to generate electric power.

Nev-881



An Idaho farmer irrigates pasture land on his ranch. By keeping up with snow survey and water forecasting reports, he knows how much water he will have for irrigating and can adjust his cropping plans prior to the planting season.

Ida-45270